zenitel

SAFE RETURN TO PORT

RELIABLE AND SECURE COMMUNICATION - FROM ENGINE ROOM TO COMMAND BRIDGE

Is your ship's line of communication secure - even in case of emergency?

… and do you comply with the requirements for Safe Return to Port regulations?

Zenitel provides a secure, wireless UHF communication solution between virtually any position on the ship at all times. In an emergency situation, the solution enables the ship's Safety Crew, Fire Fighters and Incident Commanders to communicate throughout the ship, regardless of where coordination is required.

By choosing the Zenitel Safe Return to Port (SRtP) UHF communication solution, you fulfill the SOLAS SRtP requirements for internal communication between the bridge, engineering spaces, safety centre, firefighting and damage control teams, and as required for passenger and crew notification and mustering.

IEC
IEC 60945

DNV-GL
MANAGEMENT SYSTEM CERTIFICATION
ISO 9001 · ISO 14001

RINA

IMO
SOLAS

BECAUSE
when communication is critical

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SAFE RETURN TO PORT

**Reliable and Secure Communication
- from engine room to command bridge**

- **Safe & Secure** UHF Communication

- **Redundant system** to improve reliability and availability

- **Distributed Antenna System** for coverage of all locations on the vessel

- **Compliant** with IMO/SOLAS SRtP requirements

MAXIMIZE EFFICIENCY IN CRITICAL OPERATIONS
Zenitel's Safe Return to Port (SRtP) solution maximizes your efficiency in vessel operations during critical situations by ensuring safe and secure wireless communication, no matter where coordination is required.

In an emergency, the solution enables the ship's Safety Crew, Fire Fighters and Incident Commanders to communicate anywhere on the ship, fulfilling the SOLAS regulations for SRtP.

SAFE RETURN TO PORT - a SOLAS regulation
The SOLAS Chapter II-2 on SRtP, as well as on ability for systems to remain operational after a fire casualty, applies for passenger ships constructed on or after 1 July 2010 and with a length of 120 meters or more, or having three or more main vertical zones as defined in SOLAS regulation II-1, regulation 2.

The purpose of the regulation is to establish design criteria for a ship's safe return to port under its own propulsion after a casualty, as well as to provide design criteria for systems required to remain operational for supporting the orderly evacuation and abandonment of a ship.

CLEAR ONBOARD COMMUNICATION

The Zenitel solution utilizes digital radio technology, providing **clear communication even in noisy areas**. This prevents your vital communication from being lost, which is crucial especially in stressed and critical situations.

The use of digital radio technology **increases your efficiency** of the onboard radio communication system, as the capacity in these systems is twice that of analog systems. Also, integration with other onboard communication systems is both easier and more economical.

You can choose from a selection of various ruggedized portable radios and a range of accessories such as remote speaker microphones and headsets, as well as a choice of either intrinsically safe radios for hazardous areas and Fire Fighters or standard radios for the crew's daily work, thus fulfilling all your requirements.
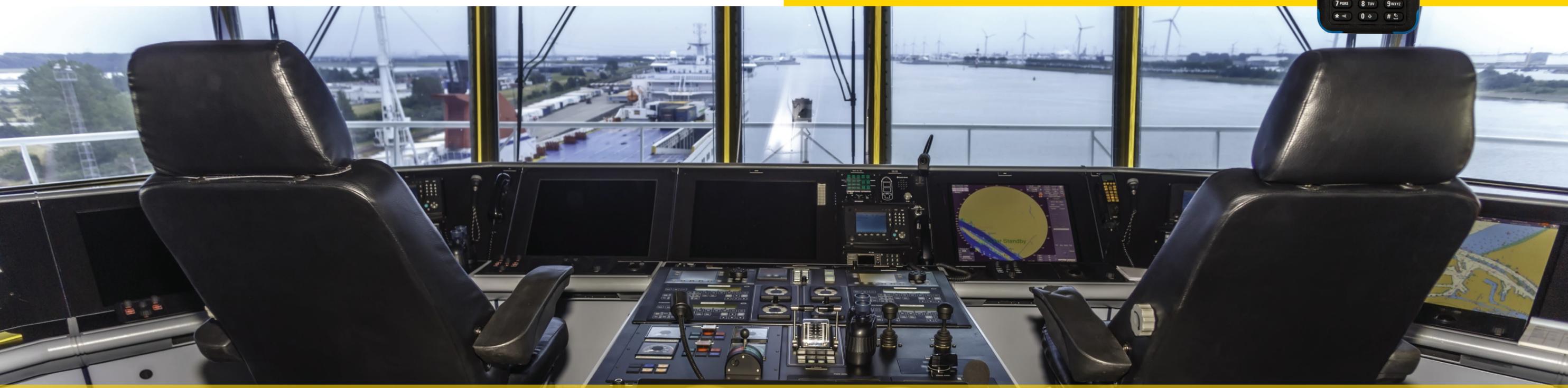
For Navigation Bridge, Engine Control Room, Ship's Office, SRtP Bridge and Safety Center, we recommend fixed radios with a user-friendly interface to the onboard radio communication system.

All radio & combiner and IP network equipment that Zenitel delivers complies with the international IEC 60945 standard.

MOTOROLA SOLUTIONS
RESELLER

As a Motorola Solution Reseller, we utilize Motorola Radio products for many applications and customer segments.
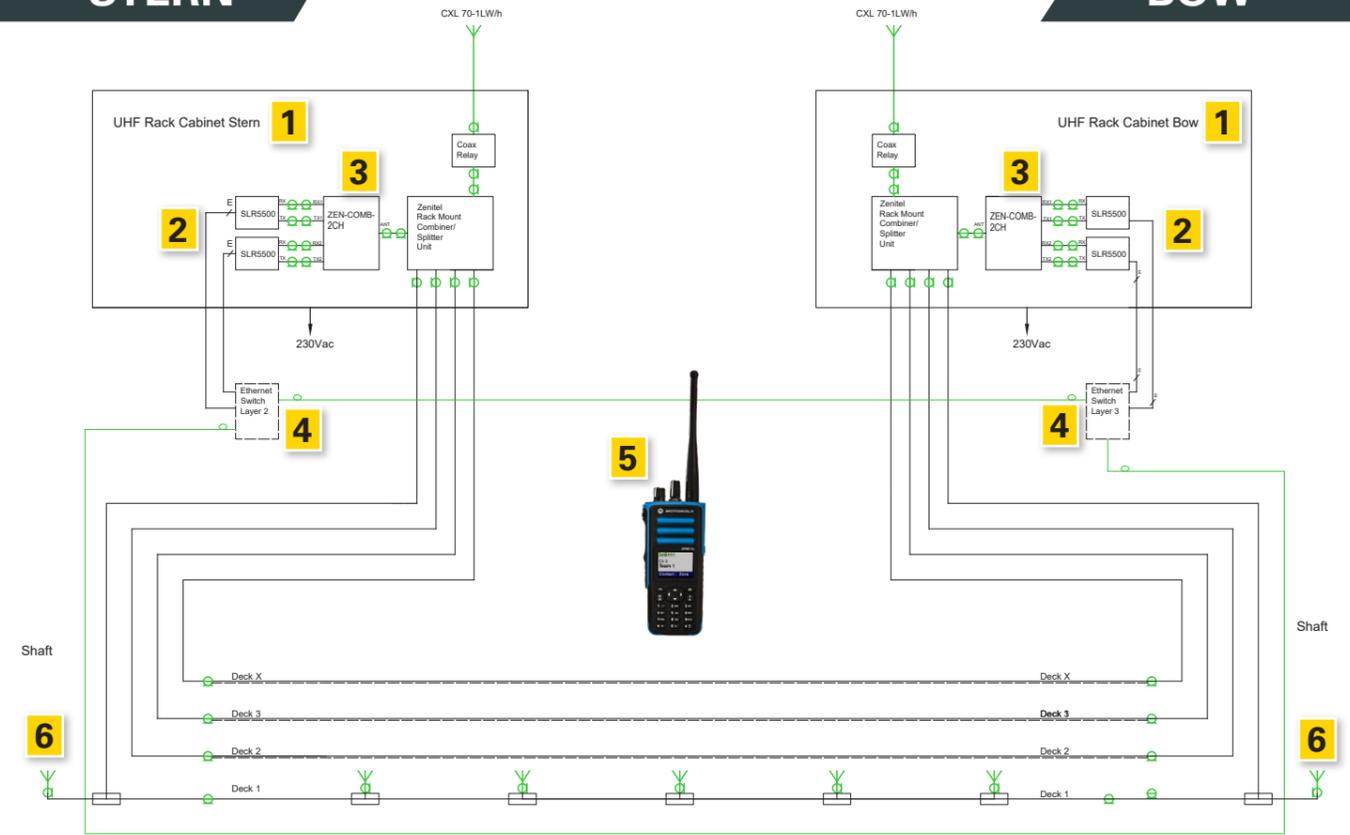
We also use Motorola radios in our SRtP UHF radio communication solutions for which Zenitel has obtained both DNV-GL & RINA approvals.

STERN

BOW

CXL 70-1LW/h

CXL 70-1LW/h

UHF Rack Cabinet Stern **1**

UHF Rack Cabinet Bow **1**

Coax Relay

Coax Relay

3

3

2 | SLR5500 | ZEN-COMB-2CH | Zenitel Rack Mount Combiner/ Splitter Unit

Zenitel Rack Mount Combiner/ Splitter Unit | ZEN-COMB-2CH | SLR5500 | **2**

SLR5500

SLR5500

230Vac

230Vac

Ethernet Switch Layer 2 **4**

Ethernet Switch Layer 3 **4**

5

Shaft

Shaft

Deck X

Deck X

Deck 3

Deck 3

6

Deck 2

Deck 2

6

Deck 1

Deck 1

A REDUNDANT SYSTEM

Digital technology

Prevents single point of failure

Intelligent roaming

Fiber-optic solutions

Improved Reliability and Availability

IMPROVED INTERNAL IMPACT
Internal communication is crucial for safety, whether among the bridge, engineering areas, safety center, fire-fighting and damage-control teams, or as required for passenger and crew notification and mustering. Our Zenitel SRtP solution design incorporates extensive redundancy to prevent a single point of failure having an impact on your system.

ONE SOLUTION - TWO CABINETS
The design includes dual redundant cabinets placed in different Main Vertical Zones. They are interconnected

by redundant fiber-optic cabling, as well as via the Distributed Antenna System. Our SRtP solution is designed so that your crew personnel don't have to consider their whereabouts on the vessel, as both cabinets handle communications in parallel. Should an incident or casualty cause a failure to one cabinet, the remaining cabinet will automatically handle all communication.

1. CABINET

Two cabinets, 19", 24U with built-in Motorola Digital UHF Base Station Transceiver(s).

2. UHF BASE STATION

Motorola MOTOTRBO SLR5500 repeater configured with Linked Capacity Plus trunked system facility.

3. COMBINER/FILTERS

Duplex filter for single base station transceiver or Zenitel transmitter combiner with active receiver multicoupler for combining more base stations.

4. ETHERNET SWITCH

Cisco Ethernet Switch and AC filter for communications between the two cabinets. Communications take place via a redundant pair of fiber-optic cables (one layer 2 switch and one layer 3 switch are required).

5. PORTABLE RADIOS

Motorola MOTOTRBO Portable Digital UHF Radios with Battery Chargers.

(Ex proof for Fire-Fighter Team).

6. DAS SYSTEM

Distributed Antenna System to cover all areas on the vessel.

See next pages for more information about our DAS System.

The solution is based on a Redundant Trunked Infrastructure System with two physically separated cabinets located in two different fire zones on the ship.

The two cabinets are connected via fiber-optic cables. Each cabinet contains UHF base station repeater(s), combiner equipment, Ethernet switch and automatic transfer switch for main and emergency power supply, and are connected to the Distribution Antenna System (DAS) on the ship.

The crew is equipped with portable radios for internal communication in Direct Mode (DMO) or Trunked Mode (TMO).

DISTRIBUTED ANTENNA SYSTEM (DAS)

Extended Radio Communication Coverage

WE ARE SPECIALISTS in designing optimal solutions in accordance with requirements specified by you, the classification societies and from the vessel's layout.

By installing DAS, we provide extended coverage of radio communications to areas of your ship that are not normally covered or very poorly covered, by direct simplex connections between radios. The components in a DAS system can be a combination of leaky antenna cables and various indoor and outdoor antennas.

The base station outdoor antennas will provide coverage on open decks, and to some extent, within indoor areas located near the base station antennas. Indoor antennas are typically installed in the middle of staircases to provide radio coverage along the entire staircase.

OUTDOOR ANTENNAS

Various types of outdoor antennas will provide radio coverage on open decks.

INDOOR ANTENNAS

Indoor antennas are typically designed for installation on ceilings or bulkheads. They may be used in stairways or corridors depending on end-user requirements. Indoor antennas may be used in a combination with feeder cables or leaky feeder cables.

LEAKY FEEDER CABLE

The use of leaky feeder cable provides a large antenna solution. The cable is designed to transmit and receive radio signals via the slotted structure of the cable. It is typically installed above the suspended ceilings in public spaces or in car decks, engine rooms, etc.
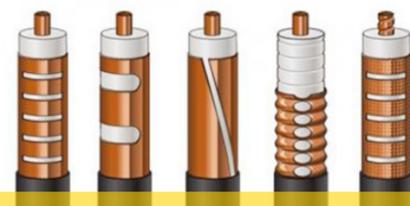
DESIGN TOOL FOR DAS

EXTENDED RADIO COVERAGE
Eliminate the risk of losing vital communication and provide extended radio coverage in practically all compartments of the vessel by taking advantage of a trunked radio infrastructure and DAS throughout the entire vessel. The DAS is designed by using a wide range of items that suit the specific vessel design and customer requirements.

The use of leaky feeder cable (radiating cable), indoor and outdoor antennas or a combination of both, ensures the radio coverage and the distribution of cables and antennas via a network of splitters, power tappers, etc., will always provide the best radio coverage possible.

The design of the DAS includes a detailed Radio Frequency calculation which accounts for signal loss in individual cables, connectors, splitters, power tappers and even body loss from crew personnel themselves.

SPECIAL DESIGN TOOL
Prior to any physical installation on the vessel, we use a sophisticated program to ensure that the final design of the DAS will provide the necessary and expected radio coverage. The program will visualize the distribution of radio signal throughout individual decks and compartments on the vessel. If any areas are found to be poorly covered by the DAS, the cables or antennas can be repositioned to solve the problem.

Based on our skilled engineers' extensive experience in designing DAS and our special design tool, we guarantee the optimal solution for you as the end user.

DAS PREDICTION TOOL
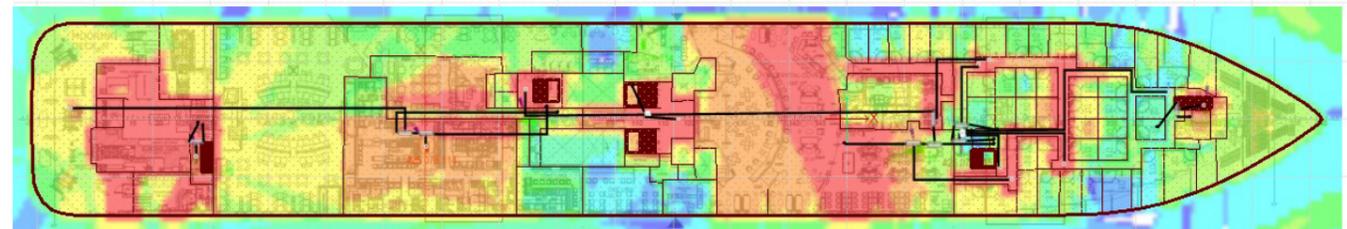
The final design of the Distributed Antenna System will provide the necessary and expected radio coverage by use of Ranplan's sophisticated program for analyzing the DAS distribution.

The program visualizes the distribution of radio signal strengths throughout the individual decks and compartments on the vessel.

Signal Level 0
-110 dBm <= Signal Level < -100 dBm (1.3%)
-100 dBm <= Signal Level < -90 dBm (1.1%)
-90 dBm <= Signal Level < -80 dBm (3.5%)
-80 dBm <= Signal Level < -70 dBm (12.6%)
-70 dBm <= Signal Level < -60 dBm (9.3%)
-60 dBm <= Signal Level < -50 dBm (21.8%)
-50 dBm <= Signal Level < -40 dBm (18.6%)
-40 dBm <= Signal Level < -30 dBm (21.0%)
-30 dBm <= Signal Level < -20 dBm (6.9%)

Call us for your DAS design!

NO: +47 40 00 25 00   FIN: +358 20 779 2270
DK: +45 43 43 74 11   CRO: +385 51 29 19 10

Integration options

Save Return to Port System

PBX/INTERCOM System
Integrating telephone or intercom system with the UHF radio system.

PA/GA System
Distribution of PA/GA directly to all UHF radios, a selection of UHF radios or a group of UHF radios.

Alarm Control System
Integration of ACS will further increase the efficiency of the crew and the handling of alarms.

INTEGRATE WITH OTHER COMMUNICATION SYSTEMS

Zenitel has offered integrated, type-approved and certified systems for Critical Communication, Data, Safety and Entertainment for more than 70 years.

As an expert in system integration, we integrate your SRtP solution with your other important communication systems in various combinations.

WE HAVE EQUIPPED MORE THAN 30 000 SHIPS

Zenitel has a long and strong presence in the onshore and offshore secure communications markets through our global brands Vingtor-Stentofon and Phontech.

In 2014, our respected Vingtor and Stentofon brands were merged to unify the identity of the products being designed, developed and manufactured by the Zenitel Group.

On November 1, 2018, Zenitel reached an agreement to acquire the Phontech product range from Jotron. Phontech specializes in Intercom and Public Address & General Alarm solutions for the Maritime and Oil & Gas segments, with a worldwide market presence. This strategic acquisition strengthens Zenitel's position as a worldwide market leader for intelligent communication solutions in the Maritime industry.

With these two brands, we provide integrated security communications for environments where life, property and assets are at stake.

Currently, more than 30 000 ships rely on our equipment and systems to keep their crystal-clear communications up and running.

- SPA PA/GA SYSTEM
- LOUDSPEAKERS
- TALK-BACK SYSTEMS
- BATTERYLESS TELEPHONE SYSTEMS
- SOUND RECEPTION SYSTEMS
- MASTER CLOCK SYSTEMS
- RADIO INTEGRATION
- INTEGRATED BRIDGE CONCEPT
- 2-WAY RADIO COMMUNICATION
- DECT
- CCTV
- ONBOARD ENTERTAINMENT

VINGTOR ◆ STENTOFON
by ZENITEL GROUP

PHONTECH
by ZENITEL GROUP

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www.zenitel.com   sales@zenitel.com